ORANGE COUNTY WATER DISTRICT
ORANGE COUNTY'S GROUNDWATER AUTHORITY

H.R. 5039 (GWRS EXPANSION) TESTIMONY
HOUSE COMMITTEE ON NATURAL RESOURCES
SUBCOMMITTEE ON WATER AND POWER

Presented to:

The Honorable Grace Napolitano
Chairwoman, Subcommittee on Water and Power

Submitted by:

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September 16, 2010

H.R. 5039 – GWRS EXPANSION

Persistent drought, wildfires, natural disasters, environmental issues and population growth all pose serious challenges to water supply in Southern California. Immediate action to create new water and increase local water reliability is necessary to protect the health and economic vitality of the residents and businesses of Southern California.

H.R. 5039, sponsored by Representative Loretta Sanchez, would amend the Reclamation Wastewater and Groundwater Study and Facilities Act by authorizing the U.S. Secretary of the Interior to participate in the planning and construction of Orange County Water District's (OCWD) Groundwater Replenishment System (GWRS) Expansion. The GWRS Expansion would produce approximately 31,000 acre-feet per year (afy) of new near-distilled quality water, enough to meet the needs of nearly 250,000 Orange County residents. This would bring the total production of the GWRS to 103,000 afy, enough water for 850,000 people.

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WATER SUPPLY CHALLENGES

OCWD manages a large groundwater basin that provides reliable, high quality groundwater to over 2.4 million people in northern and central Orange County. Responsible management of the Orange County Groundwater Basin (the Basin), has helped Orange County endure multi-year droughts in Southern California. The Basin also provides a back-up water supply for the region in the event of a natural disaster or other emergency events where water is needed.

Total water demand in northern and central Orange County is projected to increase from approximately 477,000 afy to 555,000 afy over the next 25 years. Water needs within OCWD boundaries are met primarily with a combination of groundwater (60%), imported water (25%), and recycled water (15%).

In order to sustain production from the basin, without overdrafting it and causing adverse impacts such as increased seawater intrusion or subsidence, water must be recharged back into the basin.

OCWD water supply sources include Santa Ana River base flow, Santa Ana River storm flow, imported water supplies, natural incidental recharge, GWRS water, and a small amount of miscellaneous supplies. Santa Ana River base flow is primarily comprised of tertiary-treated wastewater from wastewater dischargers in the upper Santa Ana watershed. Base flow is projected to decline in the future as water recycling and water conservation programs are implemented in the upper watershed. The amount of storm flow available for recharge varies significantly from year to year depending on the amount of precipitation in the watershed. If the GWRS Expansion is not completed to help meet the expected increase in water demand, Orange County will be forced to become more dependent upon imported water supplies, which may or may not be available in the future.

Imported supplies are purchased from the Metropolitan Water District of Southern California (MWD) via the Municipal Water District of Orange County (MWDOC). MWD water supplies come from the Colorado River and Lake Oroville. The latter is diverted through the Sacramento-San Joaquin River Delta and delivered to Southern California via the California State Water Project. An almost decade-long drought in the Colorado River watershed, along with increases in water demands in the Southwest, has dramatically reduced this supply. Reduced snowpack and precipitation within California and environmental restrictions have reduced State Water Project water supplies. For over 40 years, OCWD was able to purchase an average of 69,000 afy of excess imported supplies at a discounted rate to replenish its basin. However, these supplies have not been available since April 2007.

Because of these factors, annual groundwater production and the level of storage in the basin have steadily declined since 2006.

THE GROUNDWATER REPLENISHMENT SYSTEM

The Groundwater Replenishment System (GWRS) is an internationally-acclaimed water supply project constructed by OCWD and the Orange County Sanitation District (OCSD) and operated by OCWD. The GWRS, the largest wastewater purification and reuse project of its kind in the world, began creating 70 million gallons per day (MGD), 72,000 acre-feet per year (afy), of new near-distilled quality water in January 2008. The GWRS water is used to recharge the Basin and protect it from seawater intrusion. Rather than investing in a costly and environmentally-challenging second ocean outfall, OCSD partnered with OCWD to construct the GWRS. OCWD now purifies 35% of the Sanitation District's wastewater supply that would have normally been discharged to the ocean.

Located in north and central Orange County, the GWRS consists of three major components: (1) Advanced Water Purification Facility (AWPF) and pumping stations; (2) a major pipeline connecting the AWPF to existing recharge basins; and (3) expansion of an existing seawater intrusion barrier.

The AWPF of the GWRS consists of microfiltration, reverse osmosis, and advanced oxidation (ultraviolet light and hydrogen peroxide). Once the wastewater undergoes this advanced water purification, roughly half of the product water is injected into Orange County's seawater intrusion barrier. The remaining GWRS water is pumped to recharge basins in Anaheim, California, where the water percolates into the aquifers of the Basin.

The GWRS has numerous benefits including:

- Provides an uninterruptible source of water for seawater intrusion protection and groundwater recharge
- Decreases Southern California's dependency on water from the Sacramento-San Joaquin River Delta and the Colorado River
- Creates a locally-controlled, reliable supply of high-quality water that is drought-resistant
- Provides Orange County communities added assurance of sufficient water supplies to support regional economic vitality
- Protects the environment by reusing a precious resource and reducing the amount of wastewater discharged to the Pacific Ocean
- Uses less than half the energy required to transport water from Northern California to Southern California or to desalinate ocean water
- Created thousands of jobs from development, to construction and operation of the GWRS
- Postpones, possibly indefinitely, the need to construct or expand OCSD's ocean outfall

- Diversifies water supplies in Southern California, minimizing negative impacts resulting from limitations on imported water supplies, natural disasters, climate change, and/or droughts
- Designed to be expanded to increase production capacity to help meet future water needs
- Improves groundwater quality by reducing the amount of dissolved solids (salts) in the groundwater basin. It does this by blending GWRS water, which is low in dissolved salts, with existing groundwater, which is high in dissolved salts.

GROUNDWATER REPLENISHMENT SYSTEM EXPANSION

The GWRS was designed and constructed to accommodate an expansion for an ultimate capacity of 130 million gallons per day (MGD). Existing infrastructure, including underground piping, pump stations, and electrical systems, are sized for ultimate flows. Because the major processes (microfiltration, reverse osmosis, and ultraviolet light) are modular systems, expansion will be cost efficient.

If authorized, H.R. 5039, GWRS Expansion, would allow OCWD to construct a larger Advanced Water Purification Facility (AWPF) increasing the capacity of the plant from 70 MGD to 100 MGD. Authorization would also allow OCWD to address the issue of low nighttime wastewater flows to the plant. Currently, and with the expansion of the AWPF, there is not enough nighttime flow to support full production. The expansion would include construction of two 7.5 million gallon storage tanks to store wastewater during the daytime hours, when wastewater flows are higher and feed that supply to the GWRS during low nighttime flow periods. Implementing all these elements would result in an increased GWRS production of 30 million gallons of high-quality, near-distilled water per day, bringing the total daily GWRS production to 100 million gallons, enough for nearly 850,000 residents in north and central Orange County.

Major work of the expansion would entail:

- Demolition of an old lab facility
- Microfiltration facility construction (42 mgd capacity)
- Reverse osmosis facility construction (30 mgd capacity)
- Ultraviolet light equipment installation (30 mgd capacity)
- Additional post AWPF treatment facilities
- Additional reverse osmosis transfer pumps
- Additional product water and barrier pumps
- Construction of two 7.5 million gallon capacity wastewater storage tanks

COST

The estimated cost for construction of the GWRS Expansion is $157,391,000. A categorical breakdown of the cost for the expansion is provided in the table below:

TABLE 1 - PRELIMINARY COST ESTIMATE FOR GWRS EXPANSION FACILITIES

CATEGORY	ESTIMATED COST
Plant Wide Facilities	$12,274,000
Microfiltration/Pretreatment	$23,651,000
Reverse Osmosis	$33,564,000
Ultraviolet Light (UV/Post-Treatment)	$15,408,000
Flow Equalization Tanks	$24,993,000
Contingency (5%)	$5,165,000
Other (tax, start up, etc)	$18,406,000
Subtotal construction cost	*$133,461,000*
Engineering, Legal, Administrative	$23,930,000
Grand Total	$157,391,000

SCHEDULE

The GWRS Expansion is ready-to-go, with all design and environmental work completed. The proposed schedule to implement the GWRS Expansion is described in the table below.

TABLE 2 - SCHEDULE OF THE GWRS EXPANSION

TASK	SCHEDULE	STATUS
EIR/Environmental Approvals	March 1999	Completed
Board Approval of Engineer's Report	February 2009	Completed
Issue Design RFP	February 2009	Completed
Award Design Contract	April 2009	Completed
Amend OCSD/OCWD GWRS Operating Agreement	May 2010	Completed
Expansion Design	October 2010	To be reviewed and approved by the OCWD Board in October 2010
Construction	January 2011 – January 2015	**Pending USBR Authorization**

FEDERAL RESPONSE IS CRITICAL TO ADDRESSING REGIONAL WATER SUPPLY NEEDS

There are approximately 1.3 billion gallons of wastewater that are discharged to the Pacific Ocean everyday in Southern California. Wastewater is a reliable resource that can be reused and purified to drinking water standards. By purifying even a fraction of this resource, Southern California's dependency on imported water supplies can be lessened significantly.

If authorized by H.R. 5039, the GWRS Expansion would purify an additional 30 million gallons a day (MGD) of ultra-pure recycled water, taking the total GWRS production capacity to 100 MGD). The expansion alone would produce enough new, near-distilled quality water for 250,000 residents. The GWRS with the expansion would provide enough pure water for nearly 850,000 residents and capture over 50% of the Sanitation's District's wastewater discharges that would normally be lost to the ocean.

The GWRS Expansion has additional interregional value. The additional local water produced by the GWRS Expansion could provide immediate, reliable support for interregional water supply needs in the event of a natural disaster or emergency.

Timely passage of H.R. 5039 would allow the GWRS Expansion to be constructed and completed within the next few years, creating thousands of jobs during a time when our nation is struggling with record-high unemployment rates.

The GWRS Expansion builds upon the success of the GWRS, which cost $481 million. Members of Congress had the foresight in 1996, when the GWRS was authorized, to recognize that there would be substantial water challenges in the years ahead. They had the vision to fund such an ambitious wastewater purification facility, ultimately sharing 4.2% of the total cost of the project. The GWRS has proven to be successful. What has changed since that authorization was granted, and even since 2008 when the GWRS came online, is that California's imported water supplies are not getting better. Challenges include increasing demand, current and possibly future environmental restrictions, and increasing costs.

Now more than ever, the government's assistance is needed to address water supply issues and the economy. Authorizing H.R. 5039 allows the federal government to address both critical problems and is a sound investment of taxpayers' money.

OCWD respectfully asks the Congress to invoke its power to authorize the expansion of a project that offers real, quantitative solutions to critical federal issues.

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